

Preparations of *Bacillus pumilus* secreted RNase: One enzyme or two?

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Abstract

© 2015, Pleiades Publishing, Ltd. Immunochemical analysis of the following purified preparations of *Bacillus pumilus* RNase (binase) was carried out: industrially manufactured enzyme (Institute of Organic Synthesis, Riga, Latvia) and the enzymes isolated from the culture liquid of the native *B. pumilus* producer and from the *Escherichia coli* BL21 recombinant strain bearing the pGEMGX1/ent/Bi plasmid. Electrophoresis of all three samples of purified binase revealed two protein fractions with ribonuclease activity possessing molecular masses of ~12 and 25 kDa. The possible presence of binase II, a second secreted RNase, was ruled out. Both high- and low-molecular mass proteins interacted with binase-specific antibodies in the immunoblotting reaction, which indicated their antigenic identity. The difference in molecular mass between these proteins indicated the possible presence of two forms of binase in solution, a monomer and a dimer.

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Keywords

Bacillus pumilus, binase, binase II, immunoblotting, immunodiffusion, RNase